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Massachusetts Agriculture and Food Policy (1989-1993)

Food Processing Development in Massachusetts

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Commonwealth of Massachusetts
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Foreword

Over the past several years, we have been fortunate to see several state programs help Massachusetts expand its industrial base. The food processing industry is one example of this. Food processing is important for the jobs it can provide in rural areas, as well as for the products it markets. By giving farmers a nearby outlet for what they produce, food processors help maintain our active, productive farmland. For these reasons and more, it makes sense to further support food processing.

Through the Massachusetts Industrial Finance Agency, the Thrift Fund, the Massachusetts Government Land Bank, and Community Development Finance Corporations, we have provided companies with more than $200 million to expand and modernize, at the same time helping them add new jobs.

We look forward to continuing our commitment to this important industry, to helping it grow even more (and projections indicate it will), and position itself for the changes that will shape the industry in the 1990s and beyond. As our new Farm-and-Food Policy sets an agenda for our entire farm-and-food system, this report lays the groundwork for our continued efforts with the vital food processing industry.

Michael S. Dukakis

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In 1988, the Massachusetts Department of Food and Agriculture, with the aid of a task force, developed a draft of a Food and Agriculture Policy. An important part of this policy is the development of a food processing support program for the Commonwealth. This paper, prepared by the Department with the assistance of consultant James Fleming, provides an overview and a series of recommendations.

The food processing industry in Massachusetts is a major contributor to the state economy. Given its importance, this report recommends the development of a number of state and private efforts, with emphasis on development finance for larger firms and a package of grants, lower interest loans, and technical and market development support for smaller operations. The role of the economics, marketing and food engineering faculties at the University of Massachusetts is critical in this regard.

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August Schumacher, Jr., Commissioner

Food Processing Development in Massachusetts

SUMMARY

The Massachusetts food industry accounts for about 10 percent of the state's economy. It is a major source of employment in the Commonwealth in the areas of farming, food processing, food wholesaling, retailing, and eating and drinking places. There are 2,769 Massachusetts companies involved to some extent in food processing, of which 570 are designated as food manufacturers.

Among these processors are firms such as H.P. Hood (primarily dairy products), Ocean Spray (cranberries/juices), New England Apple Products (juices), Prince Spaghetti (pasta), Ken's Foods (salad dressings), and Gorton's (fish products). Aside from these processors, many of the other 2,200 firms carry out food processing as part of their principal business activity. Among these firms, not included in the Food Census of Manufacturers, are retail bakeries and doughnut shops, candy shops, caterers, farm-based enterprises such as dairies and cider mills, seafood and fresh fruit and vegetable wholesalers who upgrade and package bulk commodities, bakery ingredient wholesalers, supermarket commissaries, meat wholesalers, and industrial feeding commissaries.

Massachusetts' 1982 food store and restaurant sales totaled $9.0 billion of the $93 billion Gross State Product (GSP). If the value of food served at colleges, hospitals, and other institutions is considered it is reasonable to say that the food industry accounts for about 10 percent of the Massachusetts economy.

While no data exists on the overall value-added or direct food processing employment of the 2,769 firms, the 570 food manufacturers employ 26,000 people and had sales of $3.7 billion in 1982. Some 90 percent of those sales were concentrated in seven seg-

ments. Four of those segments - dairy, soft drinks, bakery, and meat products - supply local markets. Three other segments - fish products, sugar, candies and confections, and processed fruits and vegetables - supply not only local markets but also have substantial out-of-state sales and exports. Ocean Spray, for example, expects its total sales to reach $1 billion in the early 1990s.

The Massachusetts Industrial Finance Agency (MIFA) is the principal agency that has assisted larger food processing operations. MIFA's Industrial Development Bonds (IDBs), Seafood Loan Fund, and Thrift Fund have been very effective in helping food processors modernize and expand. Since 1981, MIFA has made 109 loans totaling $209 million to help Massachusetts food companies. To these imaginative financing packages, MIFA has recently added taxable pooled Industrial Development Bond offerings.

MIFA is continuing to offer excellent financing packages to qualified Massachusetts food processors. Its sister agencies, such as the Massachusetts Government Land Bank and the Community Development Finance Corporation (CDFC) and its local branches, have begun to expand their lending to farm and food processing operations. For example, the Franklin County CDFC has invested $600,000 in support of food processing and the Hilltown CDFC in Chesterfield has invested more than $100,000 in support of rural food enterprises.

Massachusetts' large population and strong economy provides a good potential market for new products. Consumers are seeking products with attributes such as Massachusetts-grown, freshness, convenience, wholesomeness, low- or no-additive, low-calorie, or ethnic variety. These consumer wants have established new niches in the marketplace.

The demand for convenience and time pressures on working women and men have created a substantial market for carry-out prepared foods. Consumers readily try new products and processors, like Au Bon Pain (breads and pastries), Colombo (yogurt), Cape Cod Potato Chip, and Oxford Pickle, which can provide a consistent, quality product, which can identify their market and establish distribution channels. Such companies have been very successful and fledgling operations would do well to study their example.

A major objective of the Department of Food and Agriculture (DFA) is to promote new and expanded ventures by smaller food processing operations, particularly those that involve farm-based food processing. Since 1982, the DFA has made 78 grants totaling $385,000 to foster such development.

Farm-based food processing is especially important. Farming in Massachusetts, except for dairying, is highly seasonal. Food processing helps farmers better utilize their labor and gain the profit from adding value to their produce. It also builds sales among their existing customers, who provide a relatively low-risk means of testing new products. Farm-based cider making (75 mills in Massachusetts) and maple syrup production (approximately 200 sugar houses) are two examples of farm-based processing operations.

The Census of Manufacturers shows that Massachusetts food processing jobs are concentrated in a few heavily-populated counties. Suffolk and Middlesex counties have nearly half the jobs. By contrast, Franklin and Berkshire counties have less than 450 food production jobs per county. This underscores the importance of the Northern Tier Project and the Western Massachusetts Food Industry Association. With funding from the DFA, these organizations are providing the infrastructure needed to promote rural and farm-based food processing.

A recent study by the Western Massachusetts Food Industry Association (WMFIA) indicates there is great potential for food processing in the region. The study identified 210 food processing firms, which provide more than 3,000 jobs in 36 communities in rural northwestern Massachusetts.

To further aid the food processing industry, the Commonwealth is examining several proposals. Among these are:

- Continue to promote the very successful MIFA and related agency loan programs to assist food processors.
- Aggressively support the Northern Tier Project and the Western Massachusetts Food Industry Association in their effort to foster farming and food processing in their area. If successful, this approach could be duplicated in central and southeastern Massachusetts.
- Develop finance programs to assist smaller farm-based and small food processors who cannot tap existing programs,

the bulk of which are targeted at companies requiring loans of $1 million and more.

- Give strong support to environmentally sound composting programs, reducing stress on dwindling landfill space and providing farmers and food processors with another marketable product. The Ocean Spray/Massachusetts Natural Fertilizer Co. joint venture using cranberry pomace and chicken manure is an example.
- Creation of a labor task force to develop a recruitment and training program for food processing workers and managers. The WMFIA study found labor to be one of the most common problems facing the industry.

Massachusetts Agriculture and Food Policy

THE MASSACHUSETTS FOOD PROCESSING INDUSTRY

The food industry is a major employer in Massachusetts, accounting for about 10 percent of the state's economy. There are 277,000 people working in farming, food processing, food wholesaling, food retailing, and eating and drinking places. Tens of thousands more are employed in institutional feeding and by companies that produce supplies and equipment for the food industry. Five components - farms, food processing, food wholesaling, food stores, and eating and drinking places - have employment levels which are readily quantifiable from census data. Table 1 gives 1982 Massachusetts employment in these five areas.

Table 1
1982 Massachusetts' Food System Employment

Industry Components	Number of Employees
Farming	15,000
Food Processing	26,000
Food Wholesaling	20,000
Food Stores	76,000
Eating & Drinking Places	140,000
Total	**277,000**

Source: 1982 censuses of Agriculture, Manufacturing, Wholesaling, and Retail Sales.

In addition to the above employment, there are tens of thousands of food industry jobs in the service sector of the economy. Hotels, schools, colleges, hospitals, nursing homes, institutions, military installations, and in-plant feeders are all involved in food preparation.

Suppliers of goods and services to the local food industry also are major employers. Examples include companies that produce packaging, paper, and disposable products, cleaning and sanitation supplies, and equipment and fixtures.

Massachusetts also has many technology-based companies that furnish specialized products, equipment, and services to the food industry. Examples include Millipore's membrane-separation systems, Foxboro's control systems, and numerous suppliers of processing equipment and laboratory equipment.

Biotechnology is a very active research area in Massachusetts. Several companies, including Biotechnica and The Genetics Institute in Cambridge and Safer, Inc. in Wellesley, have research programs involving agriculture. Among areas being probed are better food crops, biological pest control, and animal fertility drugs.

Table 2
Food Industry Data Base

Product	Number of Firms
grocery product wholesalers	472
seafood	411
bakery	395
meat & poultry	331
dairy	220
candy	210
fresh fruit & vegetables	170
soft drink beverages	134
fruit juice, cider, canned fruit & vegetables	100
alcoholic beverages	89
pickles	39
frozen foods	37
grain products	33
snacks and chips	21
flavoring, spices, preserves	19
caterers	19
coffee & tea	18
pasta	16
sauces & salad dressing	10
sprouts	7
lard & cooking oil	7
pizza	5
soy products	3
gelatin	1
malt beverages	1
molasses processing	1
Total	**2769**

Source: Mass.Dept. of Food and Agriculture

The breadth and importance of food processing in Massachusetts is shown by Table 2. This summarizes a data base prepared by the Department of Food and Agriculture.

Some 570 Massachusetts companies are classified as food manufacturers. The amount of food processing activity carried out by the 472 grocery product wholesalers varies greatly. Some do little or no food processing. Others are more heavily involved, with some operating large in-house bakeries.

Among the 2,200 firms not included in the Federal Food Census of Manufacturers are retail bakeries and donut shops, candy shops, caterers, farm-based enterprises such as dairies and cider mills, seafood and fresh fruit and vegetable wholesalers who upgrade and/or package bulk commodities, bakery ingredient wholesalers, supermarket commissaries, meat wholesalers, and industrial feeding commissaries.

These companies have identified food processing opportunities that have enabled them to increase gross margins by broadening their product lines to penetrate new markets and to meet consumer needs.

An important illustration is carry-out food sales, which have reached $60 billion in the U.S. The time demands on working women and men and changes in lifestyle have resulted in the creation of many food preparation jobs outside the home. While most of these jobs are in the restaurant/fast food sector, catering is also an important factor. Other food retailers, particularly supermarkets and specialty stores, are engaging in more value-added activity. In-store bakeries, expanded deli counters, and salad bars are examples.

The Department of Food and Agriculture is strongly encouraging farm-based food processing ventures. Examples of products from such operations are milk, cheese, and ice cream, apple cider and other juices, pies and bakery products, pre-cooked turkeys and pot pies, jams and jellies, and honey.

Except for dairying and sprout growing, Massachusetts agriculture is highly seasonal. Food processing helps the farmer gain the benefits of better labor utilization and increased profits on value-added products. It also broadens the market for regular products by attracting more customers. A farmer can tailor food products to meet the needs of a particular clientele. Many farm-based food

products require a minimal capital investment. When sales are made from a farm stand, the farmer knows his customers and gets rapid feedback. Expensive mistakes are avoided. As the product gains acceptance, production and distribution can be expanded in a variety of ways. Other farm stands and local food stores and restaurants can be added as sales outlets.

While traditional food manufacturers will be discussed in the next section of this report, the large number of other food forms that add value to food products are a major component of the overall Massachusetts food processing industry. Despite the high failure rate of new product introductions, many of these operations have relatively low-risk means of marketing new products with existing production and distribution mechanisms. The market accepts new products as consumer demand for them and willingness to try them are very high.

The consumer's demand for and interest in convenience, health foods, natural foods, low-additive foods, dietary foods, and ethnic foods illustrates some of the opportunities available. Massachusetts' large population and strong economy provide a good potential market. Specialty food production should continue to grow in Massachusetts. The Commonwealth, through programs of the Department of Food and Agriculture, the University of Massachusetts and the Extension Service, local development agencies, and its financing programs will continue to foster this growth. It is an excellent way to enhance the rural/farm-based component of the Massachusetts economy.

Food Manufacturing

The food manufacturing segment of the food industry is an important component of the Massachusetts economy. There are 570 firms whose principal business is food manufacturing and not wholesale or retail activity. The value of shipments from these companies in 1982 was $3.76 billion. These manufacturing companies employed 26,000 people, nearly the same level reported in the 1977 census. Food manufacturing employment represented four percent of the total manufacturing employment in the Commonwealth. Table 3 shows the principal catetgories of the Massachusetts food manufacturing industry.

Table 3
The Massachusetts Food Manufacturing Industry

Food	Plants	Employees	Value of Shipments (millions of dollars)
dairy products	85	3,900	$869.3
fishery products	74	4200	642.2
soft drink bottlers	57	3100	557.7
sugar & confections	49	3400	470.0
bakery products	109	5300	385.0
meat products	62	2400	360.9
preserved fruits and vegetables	35	1000	140.1
grain mill products	20	300	70.3
fats and oils	6	200	29.7
other	73	2100	238.6
total	**570**	**25900**	**3764**

Source: 1982 U.S. Census of Agriculture

Some $3.4 billion or 90 percent of the $3.7 billion in food manufacturing shipments were accounted for by seven segments. Four of these segments - dairy, soft drinks, bakery products, and meat products - represent perishable and/or locally distributed products. Three segments - fish, sugar and confectionary, and preserved fruits and vegetables - distribute not only to the local market but also have significant out-of-state sales.

Food manufacturing plants are located throughout the Commonwealth. Table 4 shows food manufacturing plants, employment and shipments by county, and the principal products produced in the larger counties.

Table 4
Food Manufacturing

	#Plants	#Employees	Shipments ($) (millions)
Suffolk meat, sugar, confections, fish	96	5800	968.1
Middlesex bakery, beverage, confections	108	6800	934.9
Essex dairy, bakery, fish	78	3200	392.0
Norfolk dairy, beverage	47	1600	343.3
Hampden dairy	41	1900	319.9
Worcester bakery	54	2400	257.9
Bristol bakery	75	2500	218.4
Plymouth	27	900	126.2
Berkshire	-	< 450	
Franklin	-	< 450	

Source: 1982 Census of Agriculture

Dairy Products

The dairy processing industry in Massachusetts is a modern, market-oriented industry. Dairy products - with shipments of $869.3 million - are the most important segment of the Massachusetts food manufacturing industry. The 85 dairy manufacturing plants are located throughout the Commonwealth.

Milk produced on Massachusetts dairy farms is nearly entirely utilized for fresh milk processing and accounts for about 25 percent of the fresh milk supply. Massachusetts farms produce about 10 percent of the state's total milk use, which also includes ice cream, butter, cheese, yogurt, and other dairy products. New York and Vermont are the major milk suppliers to Massachusetts with Maine being less important.

H.P. Hood, the leading company (and a part of Agri-Mark, the major eastern farmers' milk cooperative), markets a full range of dairy products throughout New England. The Hood product line included fluid milk, cream, cottage cheese, cheese, yogurt, ice cream, and fruit juices. Hood has modern, efficient plants in Charlestown and West Springfield. The West Springfield plant absorbs any seasonal oversupply of milk and produces dried milk, butter, and cream.

Some of Hood's production takes place outside of Massachusetts. Examples of this include ice cream produced at a Connecticut plant and cottage cheese made at a Maine plant.

Fresh milk is a highly competitive business involving local processing and an efficient delivery system. Among the principal milk processors in addition to Hood are Stop & Shop, Garelick Farms, Cumberland Farms, and West Lynn Creamery. Because of the competitive nature of the business, firms must constantly upgrade their plants and equipment. West Lynn Creamery, in particular, has used MIFA financing to expand and improve its operations.

Massachusetts has a very high per-capita consumption of ice cream. Sealtest, with its Breyer's and Sealtest labels, is the leading national brand and supplies New England from its plant in Framingham. Hendrie's of Milton, a major local producer of the popular half-gallon size, also is heavily involved in frozen novelties. Friendly Ice Cream (headquartered in Wilbraham), Brigham's, and Howard Johnson produce ice cream largely for sale in their own operations. There are also many smaller local ice cream producers, some of whom have identified special quality niches which enable them to compete successfully with the larger companies.

Colombo in Methuen is a major yogurt producer in Massachusetts and has been assisted by MIFA financing. Hood also produces yogurt.

U.S. per-capita milk production has increased since 1980 due entirely to an increase in the production of soft, perishable cheeses such as mozzarella (for pizza) and ricotta. Soft cheeses are produced locally by several companies. Dragone Cheese in Woburn is one example. Other local companies have identified specialty higher-margin products. Smith's Country Gouda (Winchendon), Craigston's Camembert (Wenham), and Westfield Farms Herb Cheese (Hubbardston) are examples.

On-Farm Dairy Processing

While the high-volume dairy business will continue to be dominated by competitive, efficient, low-cost large companies, the dairy segment provides opportunities for smaller and start-up firms to identify specialty market niches in the milk, cheese and yogurt markets. Examples of firms who have done that are the

aforementioned Smith's Country Gouda in Winchendon and Peaceful Meadows Ice Cream in Whitman. There are 20 dairy farms that process their own milk and milk products in Massachusetts.

Fishery Products

The fishery products industry, with $642 million in shipments, is the second-most important food processing segment in Massachusetts. There are 74 seafood plants, employing 4,200 people.

The seafood processors are located principally in the fishing ports of the Commonwealth. These companies provide jobs by adding value to the seafood catch brought into these ports. They also utilize their technical, production, purchasing, marketing, and distribution capabilities to process a significant quantity of imported fish and shrimp.

The prosperity of seafood processors obviously relies on the volume and quality of seafood landed at Massachusetts ports. Thus, the continued modernization of the fishing fleet and port facilities is very important to this industry.

The Commonwealth assists the seafood processing industry by providing financing through MIFA Industrial Development Bonds and the Seafood Loan program. Among the firms who have received IDB loans are Eastern Clam Corp. in Lakeville, Capeway Seafoods, Golden Eye Seafoods, Massachusetts Protein Products, and Coastal Fisheries in New Bedford, and New England Shrimp Co. in Ayer. Smaller seafood companies have utilized the Seafood Loan program.

Other major seafood processing companies located in the state include Gorton's, Fishery Products Inc., and O'Donnell Usen Fisheries Corp.

Much of the fishery product production is very high value and is shipped out of Massachusetts. This industry is important in helping to reduce the Commonwealth's overall "balance of payments" deficit on food products.

Soft drinks

The bottling and distribution of soft drinks - with $537 million in sales - is the third-leading component of the Massachusetts

food industry. Soft-drink bottling is a local franchise business and involves direct distribution to retail outlets.

While the industry is dominated by the two majors - Coca-Cola and Pepsi-Cola - there are also many smaller operations in Massachusetts that serve market niches by providing flavors not offered by the major bottlers. The Directory of Massachusetts Manufacturers lists 35 smaller soft drink companies. Bottled water is a growing business for these smaller companies.

While the Commonwealth has supported the industry with several MIFA IDB loans, it would seem that the Department of Food and Agriculture and other state agencies would have only miminal involvement in this industry.

Bakery products

In terms of employment, the baking industry is Massachusetts most important food industry sector. The 109 bakery plants employ 5,300 people and had sales of $385 million in 1982.

The baking industry in Massachusetts is very diverse. Large companies producing bread and rolls include Nissen Baking Co. in Worcester, ITT Continental Baking Co. in Natick, My Bread Baking Co. in New Bedford, and Dreikorn's Bakery Inc. in Holyoke.

Table Talk in Worcester produces pies for restaurant and supermarket distribution. Venus Wafers in Hingham and Nejaime's of the Berkshires produce specialty cookies and crackers.

Au Bon Pain in Boston makes specialty French bread and rolls for distribution through its retail outlets and via supermarkets. The Piantedosi Baking Co. in Malden is the state's major producer of submarine rolls.

Many other bakeries produce Italian, Syrian, French, and other specialty breads. Cakes, doughnuts, and snacks are produced by numerous of companies.

There is also a significant amount of wholesale trade carried out by retail baking and doughnut operations which supply product to local restaurants and retail stores.

On-Farm Bakeries

Baking is an ideal value-added activity for farm stands. Breads, doughnuts, and pies can all be sold readily through farm stands to increase dollar volume per customer. Bakery products are particularly well-suited to start-up operations because capital costs are low and there are a wide variety of market niches. In Massachusetts, about 50 roadside stands do baking. In addition, baked goods are sold by about a dozen farms at Farmers' Markets.

The perishable nature of most bakery products and the local store-door delivery system assure a market for quality locally-produced baked goods.

Sugar and Candy Products

Massachusetts has had a significant candy industry for many years. The 49 plants employed 3,400 people and had shipments of $470 million in 1982.

Cambridge is the state's candy-making capital. The New England Confectionary Co. (maker of the famous Necco wafer), Squirrel Brand Co., Nabisco Confections, Duran Confectionary (a division of Borden Inc.), and Superior Nut Co. all are located in Cambridge.

Hebert Candies in Shrewsbury and Brigham's in Arlington produce candies for their retail operations.

While the candy industry is healthy, the food industry trend toward mergers and consolidations could negatively affect the Massachusetts confectionary industry.

In addition, the closing this year of the only remaining sugar refinery in Massachusetts has meant greater transportation costs for candy makers in the state.

On-Farm Candy Making

There are many small candy firms in Massachusetts and, as with bakery products, there are many product niches. Candy products are well-suited for farm-based production and sales. Maple sugar, candied apples, and fudge, for example, are ideal items for farm stands. Winfrey's Fudge in Danvers and Chutes Candies in Shrewsbury are examples of small Massachusetts candy producers.

Meat and Meat Products

Since World War II, the production of meat and poultry has moved from the Northeast. With the closing of the last broiler plant in Maine in March of 1988, there are no significant New England facilities for slaughtering meat and poultry. The poultry industry, except for eggs, has moved south and the meat industry has moved close to farms in the Midwest. Even major centers such as Chicago, Kansas City, and St. Paul have been affected by this change.

The $360 million in sales reported by 62 plants in Massachusetts largely represents sales of further processed meat products such as frankfurters, sausage, cold cuts, and pepperoni-type products.

Meat and poultry products must be produced under strict inspection and sanitary guidelines and care must be taken by any start-up operation to conform with the regulations.

Maple products

The state's approximately 200 sugar houses annually yield products - syryp, candies, maple cream - with a value of $2 million, according to the Massachusetts Maple Producers Association. Sugaring represents a significant industry in Hampshire and Franklin counties, where 71 percent of the state's maple producers are located.

More and more maple producers are engaging in value-added production as a way to diversify their operations and increase revenues. Producers are eager to explore ways to facilitate this transition.

The maple industry is being threatened by the pear thrip, an insect which has attacked and weakened trees througout the region. The state has undertaken research aimed at preventing further damage.

On-Farm Poultry Processing

A promising farm-based activity in Massachusetts is the production of cooked turkeys and turkey products such as turkey pot pies. Turkey farms in Massachusetts have a clientele that will pay more for a fresh turkey. By adding value and convenience, the turkey farmer is increasing sales to the existing customer base. Among turkey farms adding value to their production are Bob's

Turkey Farm in Lancaster, Owen's Poultry Farm in Needham, Mar-Fran's Turkey Ranch in Granby, and Raymond's Turkey Farm in Methuen.

Preserved Fruits and Vegetables

This segment reported sales of $141 million in 1982. Since then, with the introduction of Ocean Spray's aseptic brick pack for juices and New England Apple Products' line of glass-packaged Very Fine juices, this category's sales have grown substantially, perhaps doubling the 1982 total.

There are also approximately 75 farm-based cider mills in Massachusetts. Sales volume for these is often reported as farm, not manufacturing, sales. Cider is very important to apple growers because it enables them to produce and market a value-added product from apples not suited for use as fresh product.

Dairies also process and package a significant amount of orange juice and cider, which are not reported in this category.

Oxford Pickle Co. in South Deerfield, a division of John E. Cain Co. of Ayer, produces pickles from 550 acres of cucumbers grown by 62 Massachusetts farmers in addition to bringing in cucumbers from elsewhere.

On-Farm Fruit and Vegetable Processing

Jams and jellies, while not a major industry in Massachusetts, fit very well into farm-based production schemes and are ideal items for farm stands and gift shops. Among Massachusetts producers of jams and jellies are James Coutts & Sons of Boxborough, New Salem Preserves, and St. Joseph's Abbey in Spencer.

In addition, roadside stands such as Arena Farms in Concord and Atkins Farm and Maplewood Farm in Amherst are processing locally-grown fruit and vegetables for sales at their retail stands.

Potato Chips and Snacks

While the major producer - Frito-Lay - supplies Massachusetts from a plant in Connecticut, there is a healthy potato chip production business in Massachusetts. IDB loans from MIFA have assisted the Cape Cod Potato Chip Co. in Hyannis, State Line Snacks in Wilbraham, and Wachusett Potato Chip Co. in

Fitchburg. Several other companies, including Vincent's of Salem and 'Tayters of Waltham, and Tri-Sum of Leominster, produce potato chips in Massachusetts.

A large percentage of the chips are produced from potatoes grown in Massachusetts and Maine. Store-door delivery and service are critical factors in marketing potato chips. The success of Cape Cod Potato Chip Co. illustrates how well-managed local companies can develop a market niche and compete effectively.

There are several other successful snack food manufacturers in Massachusetts, including Smartfoods of Westborough, Olde Tyme of East Longmeadow, and Royal Feast of Methuen.

Other Food Production

Other significant food manufacturing companies in Massachusetts include:

- John E. Cain Co., which produces salad dressing and mayonnaise.
- Ken's Foods in Marlborough, an important salad dressing producer.
- General Foods' Atlantic gelatin unit in Woburn, the major U.S. gelatin producer.
- Prince Macaroni Co. in Lowell and Louise's Ravioli Revere, leading pasta producers.

Massachusetts also has a number of small coffee and spice companies which compete locally. Other small food companies include pasta product and Chinese noodle manufacturers, pizza manufacturers, salad producers, and wine companies.

Massachusetts Programs to Support Food Processing

The type of assistance needed by food processors and the resources available from state programs vary markedly, depending on the size of a particular company.

The larger companies know their businesses and have the planning, technical, and marketing skills to compete. Their concerns are the same as all businesses. They want a favorable business climate which at least puts them on a level playing field with their competition in other states. MIFA's loan programs have been

particularly effective in helping food manufacturers toward this end.

Smaller companies and start-up operations have much greater needs. This is especially true of rural/farm-based enterprises venturing into value-added food processing. A major challenge for the Department of Food and Agriculture is to foster the increased prosperity of the rural sector through on-farm food processing. Department of Food and Agriculture demonstration grants have been used extensively to assist smaller enterprises. However, the Department must become even more aggressive in supporting these activities through expanded demonstration grants from sources such as the USDA's Federal-State Marketing Improvement Program (FSMIP) and support of further targeted development loan assistance from groups such as MIFA and Land Bank.

MIFA Loan Programs

The Massachusetts Industrial Finance Agency (MIFA) reports it helped 109 food companies with $209 million in financing from 1981 to 1987. See Table 5 for a summary of these loans. Most of these Industrial Development Bonds were used for food processing facilities. A smaller number went toward distribution facilities.

In retrospect, this MIFA IDB program was very important because high commercial interest rates between 1981 and 1986

Table 5
Summary of MIFA Food Industry Loans (1981-1987

	#Loans	Total$ Loans (millions)
Food Distributors and Warehouses	27	$47.7
Seafood	17	36.6
MIFA Seafood Loan Fund	8	1.1
Dairy	10	18.7
Fruit Juices	2	14.0
Grain Milling	2	12.0
Packaging and Paper Goods	5	11.1
Bakery	4	10.8
Meat & Poultry	4	8.9
Potato Chips	4	4.8
Soft Drinks	2	4.5
Others	24	39.7
Total	**109**	**209**

Source: MIFA

probably would have made the economic justification of many of these projects difficult. Having IDB financing available and promoting its use by the food industry helped assure that growing firms had the capital to expand and that existing companies could remain competitive through modernization and replacement of buildings and equipment.

From an economic development viewpoint, the state recognizes it must offer the most advantageous finance program available to its industry not only to maintain and build the Commonwealth's economy, but also to prevent other states from pirating jobs from Massachusetts.

(The federal tax code has now restricted tax-free IDBs to plant and equipment projects. Commercial projects such as distribution warehouses can no longer be financed with tax-free IDBs. Taxable IDBs are available for these projects.)

While outside the scope of this report, it is important to note that the wholesale food business in also a major segment of the Commonwealth's economy and that having competitive financing programs available will help assure that Massachusetts remains New England's food distribution center. Also, financing distribution facilities has a low risk because these buildings are well-suited to a variety of applications.

Financing food processing operations entails more risk than financing warehouse/distribution facilities. A food processing plant is much more costly on a square-foot basis and may have limited alternate uses. In addition, food processing equipment is highly specialized, expensive to install, and difficult to resell.

The MIFA Seafood Loan program has been making loans up to $200,000 to finance innovative plant and equipment modernization by seafood processors (See Table 5). Eight loans between $50,000 and $200,000 were listed in its recent annual report.

Once a business gets started and has a respectable track record, there are financing programs which can assist in helping to expand physical assets. Small Business Administration loans, the MIFA Thrift Fund, and the Massachusetts Government Land Bank are examples. The business must rely on internally-generated funds, bank financing, or an equity infusion to provide the working capital needed to expand.

Assisting Small Food Processors

Department of Food and Agriculture program

The Massachusetts Department of Food and Agriculture carries out several programs which assist smaller food processors. Among the programs are the following:

- Putting smaller growers and processors in touch with chain stores and other potential buyers.
- Providing merchandising assistance in the form of posters and other point-of-purchase promotional material that features Massachusetts-grown farm products and foods produced from those products.
- Marketing and merchandising ideas and help for the estimated 600 roadside stands in Massachusetts, especially as they develop their own food processing capabilities. Communicating successful strategies enables all roadside stand operators to take advantage of business-building ideas.
- A strong public relations program that provides timely seasonal support for crops and products and uses the news value of new ventures to build consumer awareness.
- Overseeing the operation of 75 Farmers' Markets and supporting the coupon program for lower-income people and the elderly to build awareness and demand. Farmers' Markets enable some 400 family farmers to utilize direct-marketing. They also provide a low-cost method for farm-based enterprises to test-market new products. Farmers' Markets also enable farmers to acquire merchandising and product-presentation tips from their colleagues. Processed foods sold at Farmers' Markets include turkey pot pies, cheese, cider, and baked goods.
- The "Massachusetts Grown...and Fresher!" campaign, which helps promote Massachusetts produce at Farmers' Markets and roadside stands and supermarkets and restaurants throughout the Commonwealth.
- Inspection services, such as milk plant inspections, which help assure products meet grade standards and food products adhere to sanitation requirements.
- The dissemination of price and statistical information to help farmers with the orderly marketing of their crops.

- FSMIP, which provides grants to support innovative marketing programs. This program has provided grants to 78 Massachusetts organizations. See Table 6.

Table 6
Summary of Market Promotional Grants

Massachusetts Department of Food & Agriculture (1982-1987)

	#Grants	Total $ Grants (thousands)
Dairy Processing	14	$84.3
Vegetables	13	76.5
Farmers' Markets	9	48.5
Marketing	6	24.9
Organic Farming	8	21.8
Sheep & Wool	4	13.8
Other	24	115.7
Total	**78**	**$385.5**

source: MDFA

- The USDA Targeted Export Assistance (TEA) program and its Value-Added Products Promotion (VAPP) assist in promoting export markets for Massachusetts food products. These two programs, with which DFA is closely involved, are not only applicable to smaller firms but are being used by even the largest food companies to promote exports. Ten firms received $307,565 (50 percent of their total promotional expenditure) in the past three years from TEA/VAPP. See Table 7.

Table 7
Summary of Grant Support to Promote Massachusetts Food Exports (1986-1988)

Category	Firms	$ (1000)	Countries
Fruit juices	2	132,000	Korea, Panama Germany
Seafood	2	17,000	Japan
Fresh apples	1	130,000	UK
Beer	1	24,065	UK, Sweden Germany
Crackers/Cheese	4	4,500	Bermuda
Total	**10**	**307,565**	

Source: EUSAFEC with NEASDA/USDA funds

Innovation and Technology

Innovation and technology are critical elements in building the Massachusetts food manufacturing industry. Consumers today are very interested in new products that offer some particular benefit. A product can offer better quality like Bart's Ice Cream or an all-natural feature like Cape Cod Potato Chips. Dietetic, low-fat, sugar-free, salt-free, organic, natural processing, stone ground, and low-cholesterol are some of the attributes food processors are using to establish market niches. Consumers are very willing to try new products and add new foods to their diet. The challenge to the food processor lies in identifying and meeting this need.

Large food companies use sophisticated and very expensive product and market research techniques in developing new products. Small start-up operations essentially begin in a kitchen. A product is formulated and, when the entrepreneur is satisfied, it is exposed to consumers. Feedback is very rapid, and if it is positive, expansion may be considered.

As the processor seeks to expand, a whole range of considerations arise. Among these are labeling requirements, liability insurance, board of health regulations, the need for accurate costing and accounting, package specifications, shelf-life studies, quality control, purchasing, distribution, marketing, and credit.

An important point is that allowing new technology to drive food marketing decisions is very dangerous. Enthusiasm for technology must be tempered with solid consumer research proving a sufficient market for the product exists. Examples of technology-driven product introductions which have lost hundreds of millions of dollars include Procter and Gamble's Pringles potato chips, soy protein products, sunflower oil, and cold cereals with freeze-dried fruits.

What is needed is to help start-up companies take advantage of existing proven technology to commercialize production of their products. Revolutionary ideas belong with venture capital firms and the Massachusetts Technology Development Corp.

To assist food processors there are many private consulting engineering food laboratories. Also, food equipment and ingredient firms typically offer technical service as part of their dealings with clients.

However, small start-up operations often cannot afford this type of help. The University of Massachusetts has very strong food technology and engineering resources and is committed to working with the DFA to promote rural food processing. The U.S. Army's National Food Labs in Natick are also an important source of assistance.

Food technology advances could benefit the potato chip industry, for example, by providing genetically superior potatoes and new preparation methods.

The Western Massachusetts Food Industry Association

The Northern Tier Project and the Western Massachusetts Food Industry Association provide the DFA, the University, and other development agencies with an excellent opportunity to demonstrate how available resources can be used to foster farm-based and smaller food manufacturers. Focusing support efforts and closely scrutinizing progress will yield a realistic appraisal of what programs are effective and what programs need to be strengthened.

As the Northern Tier Project and the WMFIA begin to accomplish their objectives, the lessons learned can be the basis for similar programs designed for other regions of the Commonwealth.

The WMFIA is linking small food processors with the food technology and agricultural economics experts at the University, as well as with the the resources and knowledge of other appropriate organizations. The WMFIA also is helping small food processors to avoid mistakes and learn from the experience of their peers.

New companies need assistance not only in commercializing their products, but in costing and financial control. The WMFIA is helping in this regard, also.

Agricultural Industrial Park (Pioneer Valley)

The WMFIA and the Massachusetts Government Land Bank are studying the feasibility of establishing an agricultural industrial park in the Pioneer Valley. This park would encourage food processing in the Valley by offering industrial sites and manufacturing space to firms using primarily local agricultural products as the primary inputs for their finished products.

Incubator facility

There exists a need for a food processing facility to enable small food processors to scale up production to commercially competitive levels. One concept the DFA and the Land Bank are evaluating is the incorporation of a flexible, shared food processing facility in the proposed agricultural industrial park.

The Pioneer Valley Growers' Association also would have a facility in this park. The DFA and the Land Bank currently are studying the feasibility of such an operation. Issues which must be addressed include design and capability of the building, management, inventory control, security, scheduling, differing sanitation requirements, and fixed overhead. It may be necessary that a shared facility have separate production areas to provide flexibility and to avoid control/sanitation/scheduling problems.

This concept should be pursued vigorously. Its successful implementation would serve as a strong catalyst to encourage new food processing enterprises.

Financing Small Food Processors

Successful farms and small businesses can probably finance expansion into food processing activities through regular financing sources. These would include commercial banks, the Farmers' Home Administration, the Federal Land Bank, and the Small Business Administration.

How can smaller entrepreneurs without substantial assets and a successful track record get the financial support necessary to start or expand food processing ventures? FSMIP grants help, but the overall amount of FSMIP grants for Massachusetts is modest and individual grants are not sufficient to get a business up and running. In addition, FSMIP grants favor organizations and are restricted to marketing-type activities.

Obvious sources of funds for smaller enterprises are the revolving loan funds and Small City Grants of local Community Development Corporations (CDCs). Having CDCs such as the Hilltown CDC in Chesterfield and the Greenfield CDC involved in programs like the WMFIA and the Northern Tier Project will serve to link these funding sources to small food processors. However, CDCs can generally finance only up to 40 percent of project's costs and are restricted to financing fixed assets.

However, CDCs can generally finance only up to 40 percent of project's costs and are restricted to financing fixed assets.

Fostering the development of farm-based and small food processing is an integral part of the Commonwealth's strategy to improve the rural economy in Massachusetts. To accomplish this, further funding will be needed to supplement what CDCs can provide.

One potential source of funds was outlined in the Rural Enterprise Fund bill. This fund would match up to 50 percent of the cost of a project and would also finance working capital. If the Legislature eventually approves such a program, it would provide the financial mechanism for small enterprises to make the necessary move to a commercial scale of operations. The DFA strongly supports the establishment of such a fund.

The Veterans' Administration's Veterans' Loan Program, the MIFA Seafood Loan Fund and Thrift Fund, and the Lotta Crabtree Fund also could finance small ventures.

In some cases, start-up firms have decided to avoid venture capital, opting instead to begin on a small budget and growing as revenues allow.

But by establishing supplemental finance programs to help accelerate the development of new food processing firms, the Commonwealth can help assure the food and agriculture sector of its economy moves forward.

Composting of Food Processing Waste

Solid waste problems are well known and need no discussion. The DFA composting program has the potential to assist both farmers and food processors in disposing of waste in an economic and environmentally beneficial manner.

The linkage of Ocean Spray's cranberry waste and a large egg operation in Westminster is an excellent example. Waste from seafood processors particularly should provide another opportunity to assist processors and farmers. Shrimp gurry in Ipswich and Appleton Farms manure are examples.

The composting program should be strongly supported by the Commonwealth.

CONCLUSION

The food processing industry represents a significant segment of the Massachusetts economy and, as such, is worthy of state support. Existing programs such as the Massachusetts Industrial Finance Agency's Industrial Development Bonds, Seafood Loan Program, and Thrift Fund have aided dozens of Massachusetts businesses.

In addition, agencies such as the Massachusetts Government Land Bank and the Community Development Finance Corporation (CDFC) and its local branches, have begun assisting food processors, especially smaller, farm-based operations.

While Massachusetts accounts for half the food processing in New England, there is room for substantial growth. Indeed, in his book *Food Processing, An Industrial Powerhouse in Transition*, John Connor targets Massachusetts for high growth in food processing in the coming years.

In order to help the Massachusetts food processing industry fulfill its promise, the state should make available additional financing sources. The greatest need appears to be financing for farm-based and rural enterprises, which are unable to utilize many existing programs.

A second area where the state can help the food processing industry is with the creation of strategically-located agricultural industrial parks. Such facilities could link food growers and processors, serving not only to boost agriculture and preserve farmland, but also to provide much-needed jobs in rural areas of the Commonwealth.

A third area in which the state can help the industry is in the disposal of solid waste. Farmers and food processors share a commitment to the environment because they rely on it for their livelihoods. State programs encouraging the composting of farm and food processing wastes provide an environmentally and economically sound method to address the problem.

A fourth area requiring state assistance is labor. Many Massachusetts industries, including food processing, face critical labor shortages. The creation of a task force to address the labor problem is essential.

It is clear that food processing in Massachusetts - with careful support - can become an even stronger element in the state economy.